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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/540,129	06/21/2005	Hitoshi Inoue	03597.001000.	8880

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EXAMINER	
NILAND, PATRICK DENNIS	
ART UNIT	PAPER NUMBER
1796	
MAIL DATE	DELIVERY MODE
06/09/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/540,129	INOUE ET AL.	
	Examiner	Art Unit	
	Patrick D. Niland	1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *3/2/09 and 3/27/09*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *4/30/09*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 3/27/09 has been entered.

The amendments of 3/2/09 and 3/27/09 have been entered. Claims 1-6 are pending.

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1-6 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

A. The instant claims recite "characterized in that the content M of said alkali satisfies the following equation:

$$A <= M <= (2 \times B)$$

wherein:

A is an amount of said alkali to be added to neutralize the acidic groups in said block copolymer for obtaining an infrared absorption intensity as low as 80% of an upper limit of infrared absorption intensity ascribed to ionic groups to be formed upon addition of an excess amount of said alkali to said block copolymer, and

B is a smallest amount of said alkali to be added to reach said upper limit of infrared absorption intensity."

There is not basis in the originally filed specification for this language and this language is substantially different than that of the originally filed application, particularly "a content of said alkali is such that , when an infrared absorption intensity ascribable to ionic groups to be formed upon addition of an excess amount of said alkali to said block copolymer is supposed to be 100%". There is no suggestion that this "excess" is not an equivalent excess that is defined as giving the 100% absorption of the instant claims. Any change in scope caused by the new claim language that varies from the originally presented language is new matter. If the change in scope is one that removes scope, see Ex parte Grasselli and In re Wertheim (both cited in MPEP 2100). The newly recited material clearly changes the amount of neutralizing agent which is encompassed. The change in scope from the improper grammar of the originally presented claims to the newly presented claims is seen as changing the scope of the originally filed claims to the newly presented claims due to the change in grammar. It cannot be seen, in large part due to the grammar issue of record of the originally claimed language, that the newly recited language does not change the scope of the originally filed limitations. There is not evidence to the contrary. It is not seen that the originally presented requirements in this regard are in fact exactly equal in scope to the newly language and it remains the examiner's position that the new scope is new matter. The equilibria/dissociation constant of a given acid and the strength of the alkali materially affect how much alkali is required to give 100% dissociation of the acid groups. This issue is not addressed in the applicant's arguments. The excess amount of alkali that is supposed to be 100% is not adequately described to go from the prior unclear language to the

scope of the presently claimed equations in large part due to the grammar of the originally filed application, due to the lack of description of what is "supposed to be 100%" and what qualifies as "excess amount of said alkali" particularly in view of the equilibria noted above for particular acidic groups and alkalis. These factors alone indicate a difference in scope between the newly recited language and the originally filed language. The issues raised in the applicant's declarations, particularly 78% neutralization of triblock copolymers being obtained with 1.3 equivalents further raises the issue of what was intended by the originally filed language in this regard and if it corresponds to the instantly claimed language. That scope difference is new matter.

The instant claim's indication that the amount of alkali be related to IR absorption intensity also relates this IR absorption intensity to amount of neutralization, particularly in the old claim language, e.g. "a content of said alkali is such that , when an infrared absorption intensity ascribable to ionic groups to be formed upon addition of an excess amount of said alkali to said block copolymer is supposed to be 100%". There is no suggestion that this excess is not an equivalent excess that gives the 100% absorption.

The applicant's arguments in this regard have been fully considered but are not persuasive for the above stated reasons. This rejection is therefore maintained.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Pat. Application Publication 2004/0239738 Watanabe.

Watanabe discloses an aqueous composition containing water, pigment or water insoluble dye (the instant specification includes the C.I. Vat Blues of section [0049] within the scope of water insoluble dyes and the acid and basic dyes of section [0046]) since it is the examiner's position that dye and pigment are often used interchangeably with "pigment" often referencing insolubility such that those pigments of the reference which are insoluble in water but soluble in organic solvent fall within the scope of the instant claimed water insoluble dyes of the instant claims 1, 4, and 6 necessarily and inherently, and block copolymer which may contain the instantly claimed vinyl ether structure and hydrophilic and hydrophobic segments. Watanabe discloses neutralizing carboxylic acid groups on this polymer using amounts of neutralizing agent falling within the scope of the instantly claimed amount of neutralizing agent at section [0106]. See the abstract; sections [0013]-[0014], [0018], [0044]-[0051], particularly [0049], [0056]-[0059], from which the ordinary skilled artisan will understand that the dispersing ability of the polymer necessarily aids in dispersing of the pigment/dye which it encapsulates (see also section [0082]), sections [0060] which encompasses all vinyl polymers, [0070] which encompasses the instantly claimed polyvinyl ether structure, [0076]-[0082], [0104], which discloses the instantly claimed hydrophilic and hydrophobic segments and the fact that the copolymers may be block copolymers, [0106], which discloses using amounts of alkali (section [0059]) within the scope of the instantly claimed amount so as to achieve desired ink fixation after printing and presumably sufficient dispersion ability based on the recitation of the lower amount of neutralization and the stated function "dispersant" coupled with the ordinary skilled

artisan's clear understanding that the salt groups contribute to the dispersant ability, and the remainder of the document. The carboxyl groups of the reference appear to be "carboxyl 20 groups" of the instant claim 2.

The prior art does not exemplify the instantly claimed block copolymer in their compositions.

It would have been obvious to one of ordinary skill in the art at the time of the instantly claimed invention to use the instantly claimed ink components, including the instantly claimed vinyl ether block copolymer, and amounts of neutralizing alkali of the instant claims because they are encompassed by the reference as stated above and would have been expected to give the properties described by the reference including the fixation of section [0106] and the well known properties of the vinyl ether monomers of the reference. No unexpected results commensurate in scope with the instant claims and the cited prior art are seen, particularly considering section [0106] of the reference.

The applicant's arguments of both 8/14/08 and 9/12/08 have been fully considered but are not persuasive for the reasons stated above. It is particularly noted that section [0106] of Watanabe describes the use of excess base encompassing any excess amount thereof though 1.3 times neutralization equivalent is preferred. The language of Watanabe is in terms of actual neutralization, not theoretical neutralization. The instant claims reference limitations regarding IR absorption intensity but relate these to the degree of neutralization. The instant claim's indication that the amount of alkali be related to IR absorption intensity also relates this IR absorption intensity to amount of neutralization, particularly in the old claim language, e.g. "a content of said alkali is such that , when an infrared absorption intensity ascribable to ionic

groups to be formed upon addition of an excess amount of said alkali to said block copolymer is supposed to be 100%". There is no suggestion that this excess is not an equivalent excess that gives the 100% absorption. Furthermore, the applicant's declaration of 8/14/08 by Yamamoto shows that in a triblock copolymer, which is not representative of the scope of the instant claims and the cited prior art, a chemical equivalent can give a degree of neutralization of 78%. Thus, it is expected that the excess of alkali of Watanabe will give the instantly claimed amount of neutralization, particularly where a more amenable to neutralization block copolymer than that of the applicant's declaration and examples that is encompassed by the applicant's claims and Watanable will necessarily give the instantly claimed degree of neutralization. The applicant's arguments and figures of applicant's response of 9/12/08 do not remedy the above issues regarding Watanabe's use of excess alkali in section [0106] not being demonstrated by the applicant to not give the claimed IR absorption nor the fact that the applicant's arguments are not commensurate in scope with the block copolymers encompassed by the instant claims and the cited prior art leading to the examiner's inability to determine if the claimed IR absorption is obtained by Watanabe for their excess of alkali with their block copolymers. This is an unpredictable art. No determination in this regard is possible from the evidence provided by the applicant. The figures of the 9/12/08 arguments lack probative value because they are not sworn to and it is unclear exactly what they related to in terms of ink specifics and how the examples related to Watanabe's inks discussed above. No evidence shows that Watanabe's inks do not have the instantly claimed absorptions. As stated above, Watanabe's inks having the excess of alkali of Watanabe would be expected to have the instantly claimed absorptions based on the applicant's declaration.

The reference is taken as disclosing the instantly claimed amount of alkali in answer to the applicant's question in this regard. The above obviousness statement language has been clarified though the previously cited reference to " the instantly claimed ink components" contained this subject. Arguments that the reference does not disclose the instantly claimed amount of alkali is not proven with probative evidence and is not persuasive because the prior art discloses an excess of alkali which the instant claims attribute to the 100% absoption and up to 1.3 times excess of alkali which is less than 2B of the instant claims. The above discussed inherency is therefore expected to necessarily occur. There remains no probative evidence to the contrary. Why they add the base is not pertinent. The fact that they add the instantly claimed amount of base is what falls within the scope of the instantly claimed amount of base. The arguments relating to the declaration showing 78% neutralization of triblock copolymers are noted above. This is not commensurate in scope with the instant claims and the cited prior art which are not limited to those triblock polymers and alkalis used. The above does not misconstrue the instant claims, which clearly are not limited to the declarant's triblock copolymers and neither is the cited prior art. The declaration is therefore not commensurate in scope with the instant claims and the cited prior art. There is no recitation that neutralization is on the basis of certain neutralization. The claims equate excess alkali to 100% absorption. This excess is not stated to not be equivalent excess, which reads on the instant claims. There is not probative evidence to the contrary nor support for the applicant's arguments in the originally filed specification. It is further not seen that additional time, heating, or other means of mixing do not give complete neutralization with the prior art amount of alkali of some type, particularly for the more hydrophilic block copolymers of the cited prior art that fall within the scope of the

instant claims. The well known properties of the vinyl ether copolymers of the cited prior art are those observed by the ordinary skilled artisan's who have actually used them, as evidenced by their disclosure in the cited prior art. All of those properties inherent to the vinyl ether polymers of the cited prior art are intended by the language above, e.g. "well known". That these vinyl ether block polymers are known is admitted by the applicant at page 12, line 11 of the instant specification. The well known properties of these well known polymers are not required to use the amount of the instant claims and of paragraph [0106] of Watanabe. Merely the disclosure of paragraph [0106] of Watanabe is required for this. One would choose the vinyl ether copolymers from the vast array of polymers of Watanabe for their well known properties.

The applicant's arguments in this regard have been fully considered but are not persuasive for the above stated reasons. This rejection is therefore maintained.

6. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Pat. Application Publication 2003/0027894 Sato et al. in view of US Pat. Application Publication 2004/0239738 Watanabe.

Sato discloses an aqueous ink containing a block copolymer of polyvinyl ether structure and hydrophobic and hydrophilic moieties with pigment or water insoluble dyes (sections [0045]-[0055], particularly [0055]) but is silent regarding the amount of the instantly claimed alkali. See the abstract, sections [0006]-[0147], particularly sections [0025]-[0027], [0029], which discloses hydrophilic and hydrophobic segments, [0030]-[0036], of which formula (I-k) falls within the scope of the instant claim 2, [0037]-[0046], [0055], [0070] which discloses the pH of the ink as being within 3-12 though the amount of alkali of the instant claims is not disclosed, [0073], and the remainder of the document.

It would have been obvious to one of ordinary skill in the art at the time of the instantly claimed invention to use the instantly claimed amount of alkali to use the instantly claimed amounts of alkali to neutralize the carboxyl groups of the polyvinyl ether block copolymer of Sato because, as would be understood by the ordinary skilled artisan from the state of the art as established by Watanabe, it is ionic salt groups which contribute to stably dispersing such polymers in aqueous media and the amount of neutralization thereof should be at least equivalent to the carboxyl groups and at most 1.3 times this amount to achieve desired fixing of the ink as taught by Watanabe at section [0106] and this result would be expected in the ink of Sato. This amount of alkali of Watanabe appears to fall within the scope of the amount of alkali of the instant claims.

The applicant's arguments of both 8/14/08 and 9/12/08 have been fully considered but are not persuasive for the reasons stated above. It is particularly noted that section [0106] of Watanabe describes the use of excess base encompassing any excess amount thereof though 1.3 times neutralization equivalent is preferred. The language of Watanabe is in terms of actual neutralization, not theoretical neutralization. The instant claims reference limitations regarding IR absorption intensity but relate these to the degree of neutralization. The instant claim's indication that the amount of alkali be related to IR absorption intensity also relates this IR absorption intensity to amount of neutralization, particularly in the old claim language, e.g. "a content of said alkali is such that , when an infrared absorption intensity ascribable to ionic groups to be formed upon addition of an excess amount of said alkali to said block copolymer is supposed to be 100%". There is no suggestion that this excess is not an equivalent excess that gives the 100% absorption. Furthermore, the applicant's declaration of 8/14/08 by Yamamoto

shows that in a triblock copolymer, which is not representative of the scope of the instant claims and the cited prior art, a chemical equivalent can give a degree of neutralization of 78%. Thus, it is expected that the excess of alkali of Watanabe will give the instantly claimed amount of neutralization, particularly where a more amenable to neutralization block copolymer than that of the applicant's declaration and examples that is encompassed by the applicant's claims and Watanable will necessarily give the instantly claimed degree of neutralization. The applicant's arguments and figures of applicant's response of 9/12/08 do not remedy the above issues regarding Watanabe's use of excess alkali in section [0106] not being demonstrated by the applicant to not give the claimed IR absorption nor the fact that the applicant's arguments are not commensurate in scope with the block copolymers encompassed by the instant claims and the cited prior art leading to the examiner's inability to determine if the claimed IR absorption is obtained by Watanabe for their excess of alkali with their block copolymers. This is an unpredictable art. No determination in this regard is possible from the evidence provided by the applicant. The figures of the 9/12/08 arguments lack probative value because they are not sworn to and it is unclear exactly what they related to in terms of ink specifics and how the examples related to Watanabe's inks discussed above. No evidence shows that Watanabe's inks do not have the instantly claimed absorptions. As stated above, Watanabe's inks having the excess of alkali of Watanabe would be expected to have the instantly claimed absorptions based on the applicant's declaration. pH of 12 of Sato indicates excess base relative to the acid groups of the block polymer therein and the motivation to combine with Watanabe to obtain the benefits of Watanabe's excess of alkali of section [0106] is proper. There is no showing of unexpected results over the cited prior art stemming from the instantly claimed amount of alkali.

The applicant's arguments are not persuasive also for the reasons stated above with regard to Watanabe alone.

The applicant's arguments in this regard have been fully considered but are not persuasive for the above stated reasons. This rejection is therefore maintained.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick D. Niland whose telephone number is 571-272-1121. The examiner can normally be reached on Monday to Thursday from 10 to 5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reached on 571-272-1114. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Patrick D Niland/
Primary Examiner
Art Unit 1796